

Claims

I claim:

1. A lid for an integrated circuit, said lid comprising:
 - i. a recessed portion adapted to receive a die of said integrated circuit;
 - ii. a foot portion having a surface adapted to be coupled to a substrate of said integrated circuit; and
 - iii. a plurality of recesses formed at the edges of said foot portion.
2. The lid of claim 1 wherein each recess of said plurality of recesses comprises a semi-circle.
3. The lid of claim 1 wherein each recess of said plurality of recesses comprises a beveled edge.
4. The lid of claim 1 wherein said each recess of said plurality of recesses comprises a partial conical surface.
5. The lid of claim 1 further comprising corners between said two end recesses on adjacent sides of said lid.
6. An integrated circuit having a lid, said integrated circuit comprising:
 - i. a substrate;
 - ii. a die positioned on said substrate; and
 - iii. a lid having a recessed portion adapted to receive said die and a foot portion having a planar surface coupled to said substrate by a bonding agent, said lid comprising a plurality of recesses formed at the edges of said foot portion.
7. The integrated circuit of claim 6 wherein said plurality of recesses expose said bonding agent.

8. The integrated circuit of claim 6 wherein said plurality of recesses comprises beveled edges.
9. The integrated circuit of claim 8 wherein said beveled edges of said plurality of recesses receive a portion of said bonding agent.
10. The integrated circuit of claim 6 further comprising an adhesive between said lid and said die.
11. The integrated circuit of claim 6 further comprising a plurality of bond posts formed within the plurality of recesses by the bonding agent.
12. An integrated circuit having a lid, said integrated circuit comprising:
 - i. a substrate;
 - ii. a die positioned on said substrate; and
 - iii. a lid having a recessed portion adapted to receive said die and a foot portion having a planar surface coupled to said substrate by an adhesive, said lid comprising a plurality of recesses formed at the edges of said foot portion.
13. An integrated circuit having a lid, said integrated circuit comprising:
 - i. a substrate;
 - ii. a die positioned on said substrate; and
 - iii. a lid having a recessed portion adapted to receive said die and a foot portion having a planar surface coupled to said substrate by a solder bond, said lid comprising a plurality of recesses formed at the edges of said foot portion.
14. The integrated circuit of claim 13 wherein said solder bond comprises a surface mount solder reflow.

15. The integrated circuit of claim 13 further comprising an adhesive between said lid and said die.
16. The integrated circuit of claim 13 wherein each recess of said plurality of recesses comprises a partial conical surface.
17. The integrated circuit of claim 13 further comprising corners between two end recesses on adjacent sides of said lid.
18. A method of forming a lid for an integrated circuit, said method comprising the steps of:
 - i. forming a recessed portion for receiving a die of said integrated circuit;
 - ii. creating a foot portion around said recessed portion; and
 - iii. providing a plurality of recesses at the edges of said foot portion.
19. The method of claim 18 wherein said step of creating a foot portion comprises creating a planar surface adapted to be attached to a substrate of an integrated circuit.
20. The method of claim 18 wherein said step of providing a plurality of recesses at the edges of said foot portion comprises creating recesses having beveled edges.
21. The method of claim 18 wherein said step of providing a plurality of recesses at the edges of said foot portion comprises at least one of stamping, etching, milling, and drilling said plurality of recesses.
22. The method of claim 18 wherein said steps of forming, creating and providing are performed by injection molding.

23. A method of securing a lid to an integrated circuit, said method comprising the steps of:
- i. providing a lid having a plurality of recesses at the edge of a foot portion.
 - ii. applying a bonding agent to a substrate of said integrated circuit; and
 - iii. positioning said lid on said substrate.
24. The method of claim 23 wherein said step of providing a lid having a plurality of recesses at the edge of a foot portion comprises providing a plurality of recesses having beveled edges.
25. The method of claim 23 wherein said step of applying a bonding agent to a substrate of said integrated circuit comprises a step of applying an adhesive to said substrate.
26. The method of claim 23 wherein said step of applying a bonding agent to a substrate of said integrated circuit comprises a step of applying solder to said substrate.
27. The method of claim 23 further comprising a step of providing an adhesive between said die and said conductive lid.
28. A method of securing a lid to an integrated circuit, said method comprising the steps of:
- i. providing a lid having a plurality of thru holes extending through the foot portion of the lid, wherein said thru holes are conical shaped;
 - ii. applying a bonding agent to a substrate of said integrated circuit; and
 - iii. positioning said lid on said substrate such that said bonding agent extends into said thru holes.